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PATENT  
Attorney Docket No.: 020798-002000US

Assistant Commissioner for Patents  
Washington, D.C. 20231



11-19-01  
TOWNSEND and TOWNSEND and CREW LLP  
By: *Al Buell*

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:

VANDENAMEELE-LEPLA, P.

Application No.: 09/966,419

Filed: September 27, 2001

For: METHOD AND APPARATUS FOR  
CHANNEL ESTIMATION

Examiner: Unassigned

Art Unit: 2681

INFORMATION DISCLOSURE  
STATEMENT UNDER 37 CFR §1.97 and  
§1.98

Assistant Commissioner for Patents  
Washington, D.C. 20231

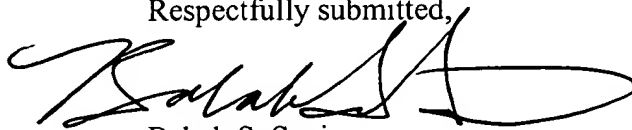
Sir:

The references cited on attached form PTO/SB/08A and PTO/SB/08B are being called to the attention of the Examiner. Copies of the references are enclosed. It is respectfully requested that the cited references be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

As provided for by 37 CFR 1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no representation is being made that a search has been conducted or that this statement encompasses all the possible relevant information.

Applicant believes that no fee is required for submission of this statement, since it is being submitted prior to the first Office Action. However, if a fee is required, the Commissioner is authorized to deduct such fee from the undersigned's Deposit Account No. 20-1430. Please deduct any additional fees from, or credit any overpayment to, the above-noted Deposit Account.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Babak S. Sani', with a large, stylized loop at the end.

Babak S. Sani  
Reg. No. 37,495

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PTO/SB/08A (08-00)

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Substitute for form 1449A/PTO

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 2

## Complete if Known

Application Number	09/966,419
Filing Date	September 27, 2001
First Named Inventor	Vandenameele-Lepla, Patrick
Group Art Unit	2681
Examiner Name	Unassigned
Attorney Docket Number	020798-002000US

## U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
	AA	5,912,876		H'mimy	06/15/99	
	AB	6,002,716		Meyer, et al.	12/14/99	
	AC	6,061,327		Demoulin, et al.	05/09/00	
	AD	6,141,393		Thomas, et al.	10/31/00	
	AE					
	AF					
	AG					
	AH					
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## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
	AQ	EP	1030489	A1	Interuniversitair Micro-Elektronica	08/23/00		
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<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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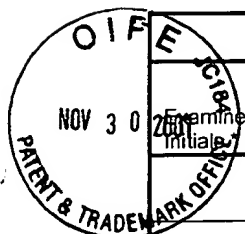


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Substitute for form 1449B/PTO  <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		<b>Complete if Known</b>	
		Application Number	09/966,419
		Filing Date	September 27, 2001
		First Named Inventor	Vandenameele-Lepla, Patrick
		Group Art Unit	2681
		Examiner Name	Unassigned
Sheet 2 of 2	Attorney Docket Number	020798-002000US	



OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS			
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	AY	Y. Li, L. J. Cimini and N.R. Sollenberger, "Robust Channel Estimation for OFDM Systems with Rapid Dispersive Fading Channels," <i>IEEE Trans. Commun.</i> , Vol. 46(7), pp. 903-915, July 1998	
	AZ	O. Edfors, et al., "OFDM Channel Estimation by Singular Value Decomposition", <i>IEEE Trans. Commun.</i> , Vol. 46(7), pp. 931-939, July 1998	
	BA	M. H. Hsieh and C.H. Wei, "Channel Estimation for OFDM Systems based on Comp-Type Pilot Arrangement in Frequency Selective Fading Channels", <i>IEEE Trans. Consumer Electr.</i> , Vol.44(1), pp. 217-225, Feb. 1998	
	BB	Ye Li, et al., "Channel Estimation for OFDM Systems with Transmitter Diversity in Mobile Wireless Channels", <i>IEEE J. Select. Areas Commun.</i> , Vol. 17(3), pp. 461-471, March 1999	
	BC	W. G. Jeon, et al. "An Equalization Technique for Orthogonal Frequency-Division Multiplexing Systems in Time-Variant Multipath Channels" <i>IEEE Trans. Commun.</i> , Vol. 47(1), pp. 27-32, Jan. 1999	
	BD	Marco Luise, et al. "Blind Equization/Detection for OFDM Signals over Frequency-Selective Channels", <i>IEEE J. Select. Areas Commun.</i> , Vol. 16(9), pp. 1568-1578, Oct. 1998	
	BE	J. Ahn, et al. "Frequency Domain Equalisation of OFDM Signals over Frequency Nonselective Rayleigh Fading Channels" <i>Electronics Letters</i> , Vol. 29(16), pp. 1476-1477, pp. 1476-1477, Aug. 5, 1993	
	BF	Y. Sun and L. Tong, "Bandwidth efficient wireless OFDM", <i>Proc. 32nd Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA</i> , pp. 78-82, Nov. 1-4, 1998	
	BG	Y. Sun and L. Tong, "Channel Equalization using one-tap DFE for wireless OFDM Systems with ICI and ISI", <i>Proc. 2nd IEEE Signal Processing Workshop on Signal Processing Advances in wireless communications, SPAWC'99</i> , pp. 146-149, May 9-12, 1999	
	BH	Y. Sun and L. Tong, "A lower ordered HMM approach to blind sequence estimation" <i>Proc. Conference on Military Communications, MILCOM'98, Bedford, MA</i> , pp. 847-851, Oct. 18-21, 1998	
	BI	Y. Sun and L. Tong, "A Channel-Whitening Blind Sequence Estimation Algorithm" <i>Proc. 1998 IEEE International Symposium on Information Theory, ISIT'98, MIT</i> , page. 180, August 16-21-, 1998	
	BJ	A. J. Redfern and G. T. Zhou, "Nonlinear Channel Identification and Equalization for OFDM Systems" <i>Proc. Intl. Conference on Acoustics, Speech, and Signal Processing (ICASSP'98) Seattle, WA</i> , pp. 3521-3524	
	BK	Simon Armour, et al. "Complexity Evaluation for the Implementation of a Pre-FFT Equalizer in and OFDM Receiver", <i>IEEE Intl Conf. on Consumer Electronics</i> , pp. 16-17, June 2000	
	BL	A. Papathanassiou, et al. "Novel Time-Domain Channel Estimation and Equalization for OFDM-based Wireless Indoor Communications Systems, <i>Information Society Technologies, Mobile Summit 2000</i> , Oct. 2000	
	BM	Jukka Rinne, et al. "An Improved Equalizing Scheme for Orthogonal Frequency Division Multiplexing Systems for Time-Variant Channels" <i>IEEE</i> , pp. 879-883, 1995	
	BN	P. Vandenameele, "Space Division Multiple Access for Wireless Local Area Networks" <i>Katholieke Universiteit Leuven</i> , Oct. 2000	

Examiner Signature	Date Considered
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<sup>1</sup> EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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